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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,662	02/20/2004	Peter C. Salmon	34091/AJT	7233
32940 7590 08/28/2007 DORSEY & WHITNEY LLP 555 CALIFORNIA STREET, SUITE 1000 SUITE 1000 SAN FRANCISCO, CA 94104			EXAMINER CLARK, SHEILA V	
			ART UNIT 2823	PAPER NUMBER
			MAIL DATE 08/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/783,662	Applicant(s) SALMON, PETER C.	
	Examiner S. V. Clark	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-48 is/are pending in the application.
 4a) Of the above claim(s) 28-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 37-48 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al.

Takano et al shows in for example figures 1-4 show an interconnection circuit board for use with electronic components comprising: a copper substrate 12, a dielectric layer 22 formed atop the copper substrate; a copper trace 16 layer having a plurality of distinct copper traces disposed atop the dielectric layer; and terminals 48 provided at ends of at least some of the copper traces for permitting electrical communication with the electronic components.

As the claim fails to be specific relative to which ends are identified relative to the possessing said terminals it is deemed that the ends identified in Takano et al are obviously characteristic of the end features recited.

With regard to claim 38, the interconnection circuit board of Claim 37 wherein the copper substrate is fabricated with electrically isolated conductive feedthroughs 21a,25 therein.

With regard to claim 39, the interconnection circuit board of Claim 38 wherein at least some of the conductive feedthroughs 27, 28 electrically connect with at least some of the copper traces 26b.

With regard to claim 40, the interconnection circuit board of Claim 37 wherein at

least one of the terminals includes a well provided in the underlying dielectric layer and formed by conductive walls disposed on the dielectric layer, the well being substantially filled with conductive material (see figure 4).

Claims 41-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al.

Takano et al shows in for example figures 1-4 an electronic module comprising: a copper substrate 1; a dielectric layer 22 formed atop the copper substrate; a copper trace layer 16 having a plurality of distinct copper traces disposed atop the dielectric layer; terminals 48 provided at ends of at least some of the copper traces for permitting electrical communication with the electronic components; and an electronic component 30 attached to at least one of the terminals.

As the claim fails to be specific relative to which ends are identified relative to the possessing said terminals it is deemed that the ends identified in Takano et al are obviously characteristic of the end features recited.

With regard to claim 42, the electronic module of Claim 41 wherein the copper substrate is fabricated with electrically isolated conductive feedthroughs 21a,25 therein.

With regard to claim 43, the electronic module of Claim 41 wherein the electronic component includes an integrated circuit chip 30.

With regard to claim 44, as wires such as cables may be typically used for connectors in electronic modules and as cables are typically associated with the interconnection of module units to exterior devices, the module of Takano et al is deemed to possess conventional interconnections such as cables that are well known in this art and wherein as recited in the claim the electronic component may obviously included a cable.

With regard to claim 45, the electronic module of Claim 41 wherein the electronic component as it is identified broadly by Takano et al which suggest that said chip may be one of many that are well known in this art and thus utilizing the Takano et al teachings whereby such well known chip would include wireless transceiver chips.

With regard to claim 46, the electronic module of Claim 41 further comprising an additional electronic component 50 attached to another of the terminals. As "electronic component" may broadly be interpreted as many components utilized in an electronic module and as the claim has recited said component broadly, component 50 is deemed to be obviously of the many electronic components that may comprise an electronic module.

With regard to claim 47, the electronic module of Claim 41 further comprising a copper top plate 40 attached to a back face of the electronic component.

With regard to claim 48, the electronic module of Claim 41 further comprising a chamber attached to a back face of the electronic component and adapted for circulating a coolant fluid. As the heat spreader of Takano et al has been discussed broadly as a device for dissipating heat the lack of any specific discussion of features is deemed to suggest that said heat spreader is one of well known convention and may be adapted with well known features such as those recited in this claim.

Claims 37-40 are rejected.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to S. V. Clark at telephone number (571) 272-1725.



S. V. Clark
Primary Examiner
Art Unit 2823

August 16, 2007